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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/814,895	03/30/2004	Hiroyuki Gennami	5000-5160	7578
27123	7590	04/07/2006	EXAMINER	
MORGAN & FINNEGAN, L.L.P. 3 WORLD FINANCIAL CENTER NEW YORK, NY 10281-2101			NAGY, MARC I	
			ART UNIT	PAPER NUMBER
			3748	
DATE MAILED: 04/07/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/814,895	GENNAMI ET AL.	
	Examiner	Art Unit	
	Marc I. Nagy	3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7,9-17,19 and 20 is/are rejected.
- 7) ☒ Claim(s) 8, 18 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on ____ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>3/30/04, 10/18/04</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The information disclosure statements (IDS) submitted on 12/23/2003, 3/9/2005, and 8/19/2005 are acknowledged. The submission is in compliance with the provisions of 37 CFR 1.97 and 1.98. Accordingly, the information disclosure statement is being considered by the examiner.

Specification

3. The abstract of the disclosure is objected to because the last sentence lacks a period. Correction is required. See MPEP § 608.01(b).
4. The disclosure is objected to because of the following informalities:

On page 7, line 16, "The **right**..."

Appropriate correction is required.
5. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: "Scroll compressor with first and second reservoirs."

Allowable Subject Matter

6. Claims 8 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Kuroki et al. (U.S. Patent No. 6,454,551). With regard to claims 1 and 11, Kuroki discloses a scroll compressor, comprising: a housing having a stationary wall (the shaft-supporting member 12 functions as stationary wall); a pressure receiving area being in the housing (balance weight 18); a stationary scroll (fixed scroll 11) having an axis, wherein the stationary scroll is arranged such that the axis is substantially horizontal (see Fig. 1), wherein the stationary scroll has a stationary base plate (fixed scroll base 23), a stationary volute portion (fixed scroll wall 24), and a circumferential wall (outer circumference of stationary scroll), wherein the stationary base plate is fixed to the housing and has a first face and a second face, the first and second faces being oriented in the opposite directions from each other (see Fig. 1), wherein the stationary volute portion extends from the first face of the stationary base plate and has a sealing end face (tips of fixed scroll wall 24), wherein the circumferential wall is located around the stationary base plate, wherein, with respect to a direction perpendicular to the first face, the circumferential wall extends further from the first face than the stationary volute portion (see Fig. 1), wherein the stationary volute portion has an extended portion that extends for a predetermined distance along an inner surface of the circumferential

Art Unit: 3748

wall from an outer end of the stationary volute portion, and wherein a section of the sealing end face that corresponds to the extended portion functions as a pump chamber defining face (see circumferential wall at top and bottom of Fig. 1); a movable scroll (movable scroll 20), wherein the movable scroll has a movable base plate (movable scroll base 22) and a movable volute portion (movable scroll wall 25), wherein the stationary base plate has a circumferential surface, a first face, and a second face, the first and second faces being oriented in the opposite directions from each other (see Fig. 1), wherein the first face of the movable base plate faces the sealing end face, wherein the volute portions are engaged with each other to form a gas compression chamber in between (see hermetic spaces S0, S1 in Fig. 5), wherein, as the movable scroll orbits about an axis of the stationary scroll, the gas compression chamber is moved from a outer portion toward the center of the stationary volute portion, whereby the volume of the gas compression chamber is decreased to compress gas (see column 4, lines 31-53), wherein a section of the first face of the movable base plate that is close to the circumference contacts the pump chamber defining face (see circumferential wall at top and bottom of Fig. 1 contacting movable base plate), and wherein the second face of the movable base plate has a section that either contacts the pressure receiving surface or is located close to the pressure receiving surface with an infinitesimal clearance (end of cylindrical portion 34); and a suction chamber defined between the inner surface of the circumferential wall and the circumferential surface of the movable base plate (see area between wall and base plate at bottom of Fig. 1), wherein the circumferential surface of the movable base plate and an inner surface of the

Art Unit: 3748

circumferential wall form a sealing portion at sections contacting each other or at sections located close to each other with a narrow clearance (see narrow clearance between wall and base plate at bottom of Fig. 1), wherein the sealing portion moves along the inner surface of the circumferential wall as the movable scroll orbits (sealing portion moves by virtue of movable scroll affixed to eccentric shaft), wherein, when the sealing portion is located in a lower portion of the suction chamber (see bottom of Fig. 1), a pump chamber for lubricating oil is defined by the sealing portion (where the first face of 22 contacts the volute portion of the inner circumferential wall), the pump chamber defining face (non-contacted area of volute portion of inner circumferential wall), the pressure receiving area (balance weight 18), the inner surface of the circumferential wall, and the circumferential surface of the movable plate.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. Claims 2, 12 and 3, 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuroki et al. (U.S. Patent No. 6,454,551) in view of Gennami et al. (U.S. Patent Publication No. US 2002/0134101 A1). With regard to claims 2 and 12, Kuroki discloses the compressor according to claims 1 and 11, as discussed above, further comprising an electric motor (stator 29 and rotor 30 constitute a motor) for causing the movable scroll to orbit, wherein the electric motor has an axis of rotation (drive shaft 14), wherein the housing defines a motor accommodating chamber (motor housing 13) that accommodates the electric motor such that the rotation axis of the motor is substantially horizontal (see Fig. 1), however fails to disclose a motor accommodating chamber configured either such that the pressure in the motor accommodation chamber is substantially equal to the pressure in the suction chamber or such that the motor accommodating chamber forms part of a suction passage. Gennami teaches the use of a oil return passage (oil transfer route 4a) that connects a bottom portion of the motor accommodating chamber (motor chamber 45) to a lower portion of the suction chamber (suction-side of compression mechanism 21) and thus configures the motor accommodation chamber to either have a pressure substantially equal to the suction chamber pressure or such that the motor accommodating chamber forms part of a suction passage that guides gas from the outside to the suction chamber (see Fig. 1). With regard to claims 3 and 13, Gennami additionally teaches the transport of lubricating oil, wherein lubricating oil in the bottom portion of the motor accommodating chamber is drawn into the suction chamber by pumping action of the pump chamber through the oil return passage (see abstract). It would have been

Art Unit: 3748

obvious to one having ordinary skill in the art at the time the invention was made to utilize an oil return passage so that oil may be drawn into the suction passage to reduce the amount of oil in the motor accommodating chamber and lubricate the scrolls.

11. Claims 4, 14 and 7, 17 and 9, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuroki et al. (U.S. Patent No. 6,454,551) in view of Gennami et al. (U.S. Patent Publication No. US 2002/0134101 A1) and further in view of Kimura et al. (U.S. Patent No. 6,872,063). With regard to claims 4 and 14, the modified Kuroki apparatus discloses the compressor according to claims 2 and 12, as discussed above, including a discharge chamber (Gennami: discharge chamber 25), the pressure of which is a discharge pressure, wherein a first reservoir chamber is located in the discharge chamber to store lubricating oil (Gennami: storage area 85), wherein a back pressure chamber is defined between the second face of the movable base plate and the stationary wall (Kuroki: back pressure chamber 36), but fails to connect the back pressure chamber to the first reservoir chamber. Kimura teaches the use of a fluid passage to connect the back pressure chamber to the first reservoir chamber through a fluid passage having a constriction (pressure supply passage 76), and wherein the back pressure chamber is connected to the motor accommodating chamber (motor chamber 12a) through an oil bleed passage (bleed passage 77) having a constriction or an adjuster valve (control valve 78). It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize a connection between the back pressure chamber and first reservoir chamber to recirculate the excess lubricating oil via a fluid passage to the motor chamber and controllably discharge it.

Art Unit: 3748

12. With regard to claims 7 and 17, the modified Kuroki apparatus fails to disclose an elastic body. Kimura teaches the use of an elastic body (elastic member 71) located between the second face of the movable base plate (back surface 65a of movable base plate) and the stationary wall (facing wall 64b), and has the pressure receiving area (area between back surface and stationary wall), the elastic body urging the movable scroll toward the stationary scroll, and wherein the elastic body seals the back pressure chamber (back pressure chamber 75) and the suction chamber (suction chamber 51) from each other (see Fig. 2A). It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize an elastic body so that no leakage occurs between the back pressure chamber and the suction chamber, improving the efficiency of the compressor.

13. With regard to claims 9 and 19, the modified Kuroki apparatus fails to disclose an annular projection. Kimura teaches the use of an annular projection (protrusion 65b) extended from the second face of the movable base plate, and wherein the annular projection is pressed against the elastic body, thereby sealing the back pressure chamber (see Fig. 2A). It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize an annular projection pressed against the elastic body in order to further seal the back pressure chamber.

14. Claims 5, 15 and 6, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuroki et al. (U.S. Patent No. 6,454,551) in view of Gennami et al. (U.S. Patent Publication No. US 2002/0134101 A1) and further in view of Kimura et al. (U.S. Patent No. 6,872,063) and further in view. With regard to claims 5 and 15, the

Art Unit: 3748

modified Kuroki apparatus discloses the compressor according to claims 4 and 14, but fails to disclose a second reservoir chamber. Gennami teaches the use of a second reservoir chamber (oil storage area 45a) formed at a bottom portion of the motor accommodation chamber, the second reservoir chamber bulging downward (concave area—see Fig. 1). With regard to claims 6 and 16, Gennami teaches the transport of lubricating oil in the second reservoir chamber as being drawn into the suction chamber by pumping action of the pump chamber through the oil return passage (see abstract, Fig. 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize a second reservoir chamber bulging downward to allow oil to collect at the bottom of the motor chamber and remove it via the suction chamber to keep the motor dry thereby minimizing leakage of electricity.

15. Claims 10 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuroki et al. (U.S. Patent No. 6,454,551) in view of Yamada et al. (U.S. Patent No. 5,468,130). Kuroki discloses the compressor according to claims 1 and 11, but fails to disclose the surface of the movable scroll being plated with nickel phosphorus. Yamada teaches that it is conventional in the art to utilize the movable scroll member being coated with nickel phosphorus. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the surface of the movable scroll being plated with nickel phosphorus, as taught by Yamada, in the Kuroki apparatus, since the use thereof would have improved the wear resistance.

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Odachi et al. (U.S. Patent Publication No. US 2003/0017054 A1) discloses an electric compressor and control method therefor; Kobayashi et al. (U.S. Patent No. 6,210,137) discloses a scroll fluid machine; Sakai et al. (U.S. Patent No. 5,630,712) discloses an electrically-drive closed scroll compressor having means for minimizing an overturning moment to an orbiting scroll; Mitsunaga (Japanese Patent Publication No. 03-138476) discloses a scroll compressor; Arata (Japanese Patent Publication No. 61-053488) discloses a horizontal scroll compressor.


17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc I. Nagy whose telephone number is 571-272-2758. The examiner can normally be reached on Monday - Friday 8 a.m. - 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion can be reached on 571-272-4859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3748

18. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MIN


THOMAS DENION
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